FHWA Docket No. FHWA-2001-8954 National Bridge Inspection Standards

Application of Standards

Should the FHWA definition change the way the bridge length is determined or what the minimum bridge length should be for reporting purposes

More clarification or specific standards need to exist for bridges that are super elevated and skewed. Culverts that are less than 23 ft in length seen to never be inspected and should be added to the bridge inventory.

Inspection Procedures

What impact will changing the underwater inspection intervals have on public authorities complying with this as an NBIS requirement?

I agree that certain structures in low flow bodies of water, with no chance of impact damage from debris or vessels, and where chemical attack is unlikely may not need an underwater inspection every 5 years. However, I have inspected bridges that need an underwater inspection more frequently that ever 5 years. In fact, I have inspected bridges that were less than 2 years old and the main span piers were already undermined due to scour and in danger of collapse.

There should be a general guideline for the “not to exceed” frequency of inspections. This “not to exceed” number of years should be 4 or 5 years but each state DOT (who know their structures best) should be allowed to determine the frequency of underwater inspections for their bridges. This freedom should not allow a state’s DOT to use a greater than 5 year frequency or miss an inspection just to save money in a particular year.

Frequency of Inspections

Should the 4-year interval be increased so that more bridges would be eligible for the extended inspection cycle?

No the interval for above water inspections should not be increased to 4 years. A lot can happen to a bridge in 2 years, especially in harsh northern climates where de-icing salts and chemicals are applied to bridge decks. The 2-year cycle needs to continue and maybe add an intensive non-destructive evaluation of all bridge components and connections every 4 years.

Qualification of Personnel

Should the individual in charge of the inspection and reporting, who is a PE, be required to have the same training as bridge inspectors and have additional experience in bridge inspection?

Definitely yes. I believe that the person in charge needs to be a registered PE in civil/structural engineering. Additionally, this person needs to have the knowledge and experience (academic and on the job) to conduct bridge inspections. This person needs to have passed the NBIS 80 hours course for bridge inspections, scour course, and underwater course. Also this person should have at least 5 years of experience inspecting bridges. But are there any underwater inspection courses currently approved by FHWA or DOT ?? The NBIS 80 hour course only has 2 hours on underwater inspections which is hardly effective. I believe that there needs to be more courses on inspecting specific

bridge types and materials (steel, concrete, timber, composites) as well as how to perform non-destructive testing.

Should those performing underwater inspections be qualified licensed professional engineers?

No. A licensed PE as mentioned above should be at the bridge during the inspection but only allowing PE's to dive the bridge is an invitation for disaster. If the PE is a qualified commercial diver (graduated from an approved 6 to 12 month commercial diving course) and has gained experience with diving in the environmental conditions at the bridge, then the PE could perform an adequate inspection. Not very many PE's in this country are licensed commercial divers. Many PE's that conduct underwater inspections are only certified in recreational SCUBA diving. This type of training does not prepare a person for the conditions encountered at many bridge locations. Additionally, OSHA and USCG regulations specifically state what modes of diving are to be used in different conditions. Recreational SCUBA training does not teach the use of the surface supplied diving mode that is required for many of the conditions at underwater inspection sites.

As a commercial diver with an engineering background and numerous bridges "under my belt", I believe that the person conducting the underwater portion of a bridge inspection should not have to be a PE. If the underwater inspector has successfully completed the 80 hour course and scour course, is a licensed commercial diver, and has the hands on experience of conducting bridge inspections, then this person is qualified. This type of person will most likely be more comfortable in the water and thus be able to concentrate on the task of conducting the inspection.

What impact would requiring the underwater inspector to be an engineer have on public authorities complying with this as an NBIS requirement?

This requirement may lead to some falsifying diving credentials in order to continue underwater inspections. Also some states and agencies may decide to ignore the current federal regulations for diving qualifications, which is currently happening in some locations. Public authorities will have to ensure and insist that all members of an underwater inspection team that will be diving are qualified commercial divers.